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Perspectives on Commercialization of the Well Injection Depth Extraction (WIDE) Technology

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Informatics Corporation

Industry Partnerships for Environmental
Science and Technology Conference
National Energy Technology Laboratory
October 30, 2001
Morgantown, WV

Corporate Background

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- Founded in 1984 to serve the Nuclear Power Industry
- Certified Small, Disadvantaged Business
- Over 350 employees, 12 offices
- Certified as an MBE in Washington, Tennessee, North Central and South Central Texas
- Core Expertise
  - Project Management
  - Project Controls
  - Environmental Compliance
  - Nuclear Safety Engineering
  - Information Technology

Offices / Work Sites

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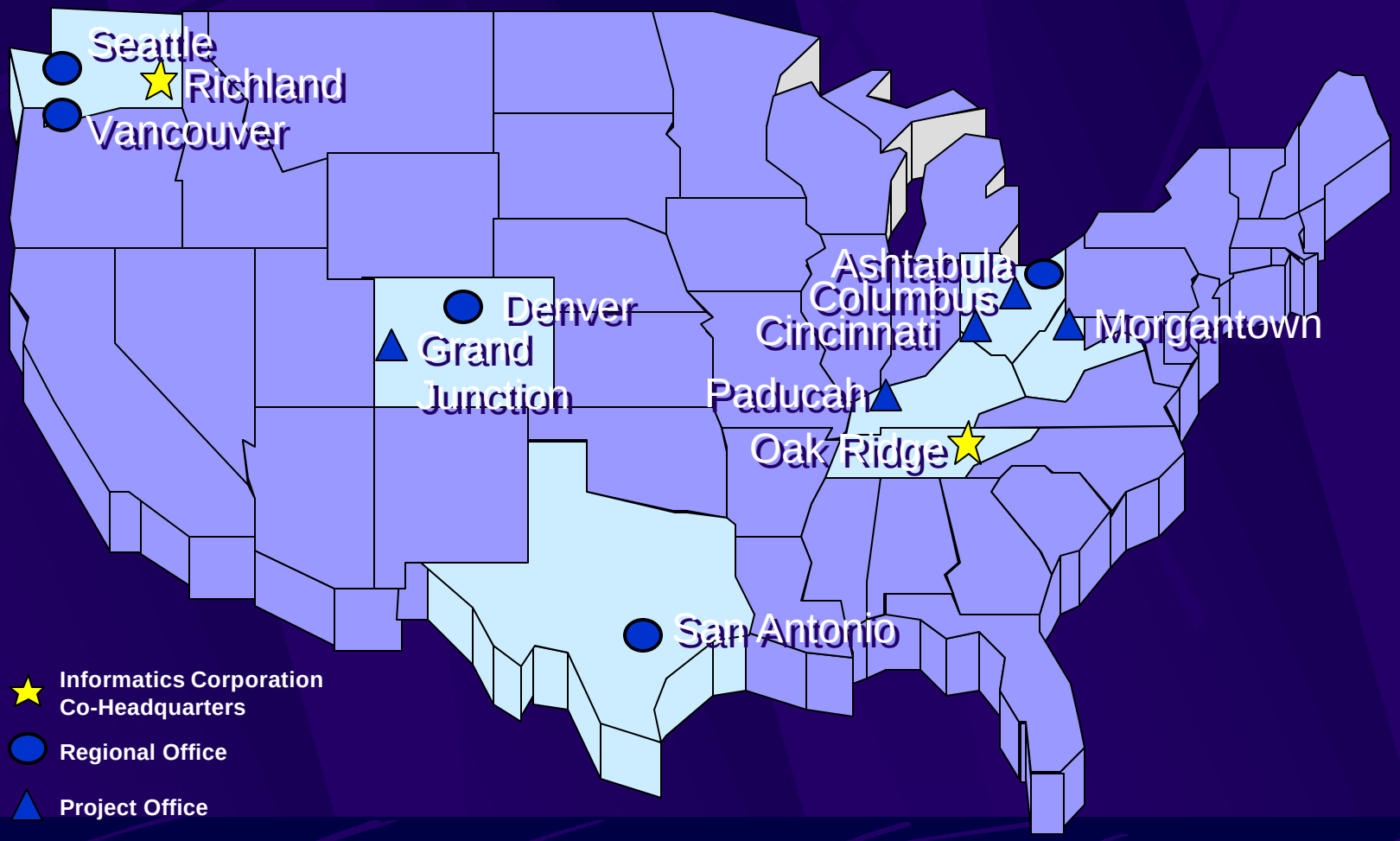

Growth through Performance

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- Recognized by Hispanic Business magazine in 2001, 2000, 1999 and 1998 as one of the largest and fastest growing Hispanic-owned companies in the United States
- Named one of America's 500 fastest-growing private companies in 1999 and 1998 by *Inc.* Magazine
- Recognized as a Washington High Technology Fast 50 firm in 2001, 2000, 1999, and 1998 by program sponsors Deloitte & Touche LLP, NASDAQ and Piper Jaffrey
- SBA “Administrator’s Award”
  - 1998 Hanford & Rocky Flats
  - 1999 Hanford & Rocky Flats

WIDE Development Timeline

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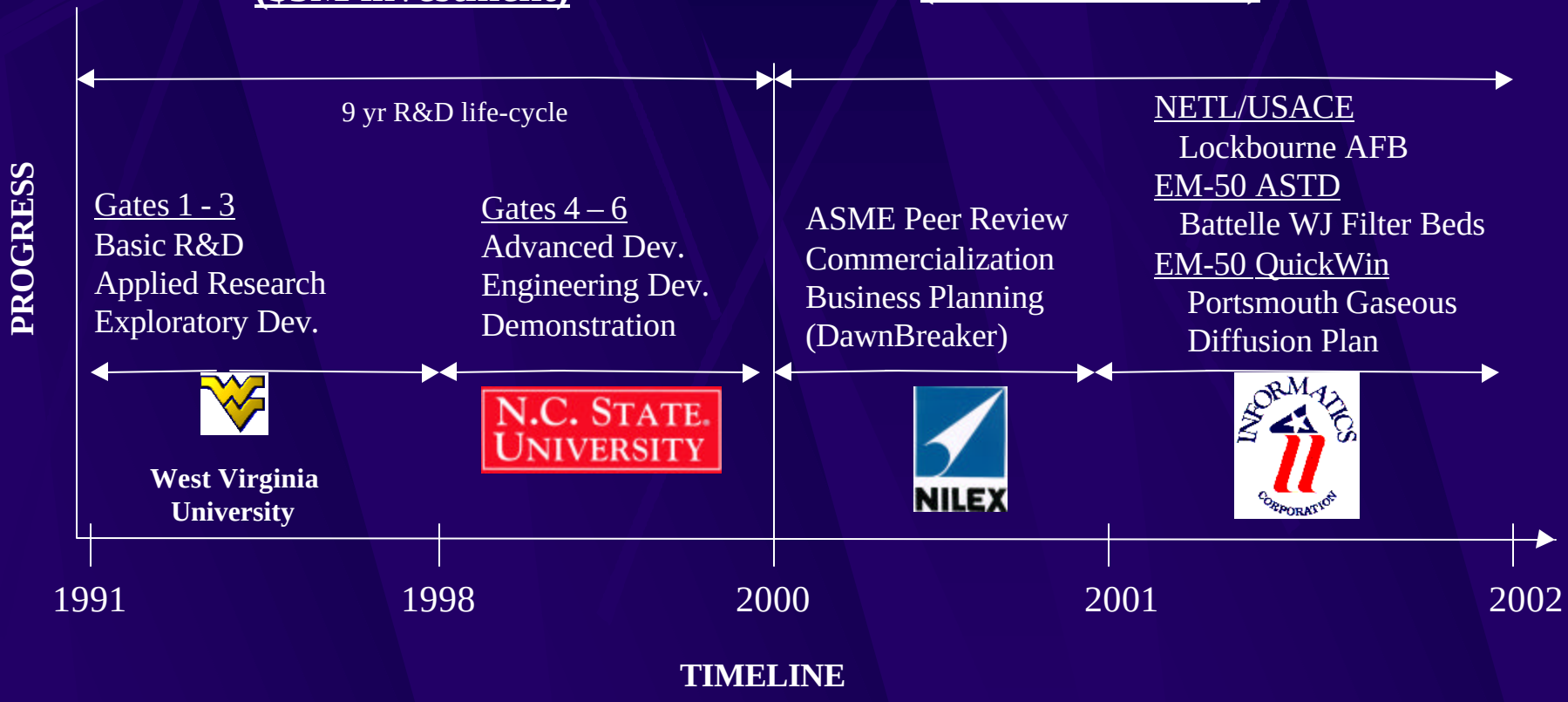
NETL University Programs Cooperative Agreement ($3M investment)

Informatics / Nilex Implementation/Commercialization ($250k investment)



Subsurface Contaminants Focus Area

WIDE System Advantages

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- **Reduced Drainage Path (2 - 5 ft) for Accelerated Flushing**
- **Redundancy for Efficient Groundwater Collection**
- **Applicability to Diverse Soil Types and Conditions (Low *k* 10^{-3} *to* 10^{-8} *cm/s*, High Clay %)**
- **Targets Flushing Area for Source Plume Control**
- **Cost-Effective, Rapid Installation, w/ Off-the-shelf Components**
- **Re-useable and highly mobile equipment**
- **Separation of VOC and Metal Waste Streams**
- **Workers Isolated from waste during construction and operation phases**

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Well Injection Depth Extraction (WIDE) Soil Flushing

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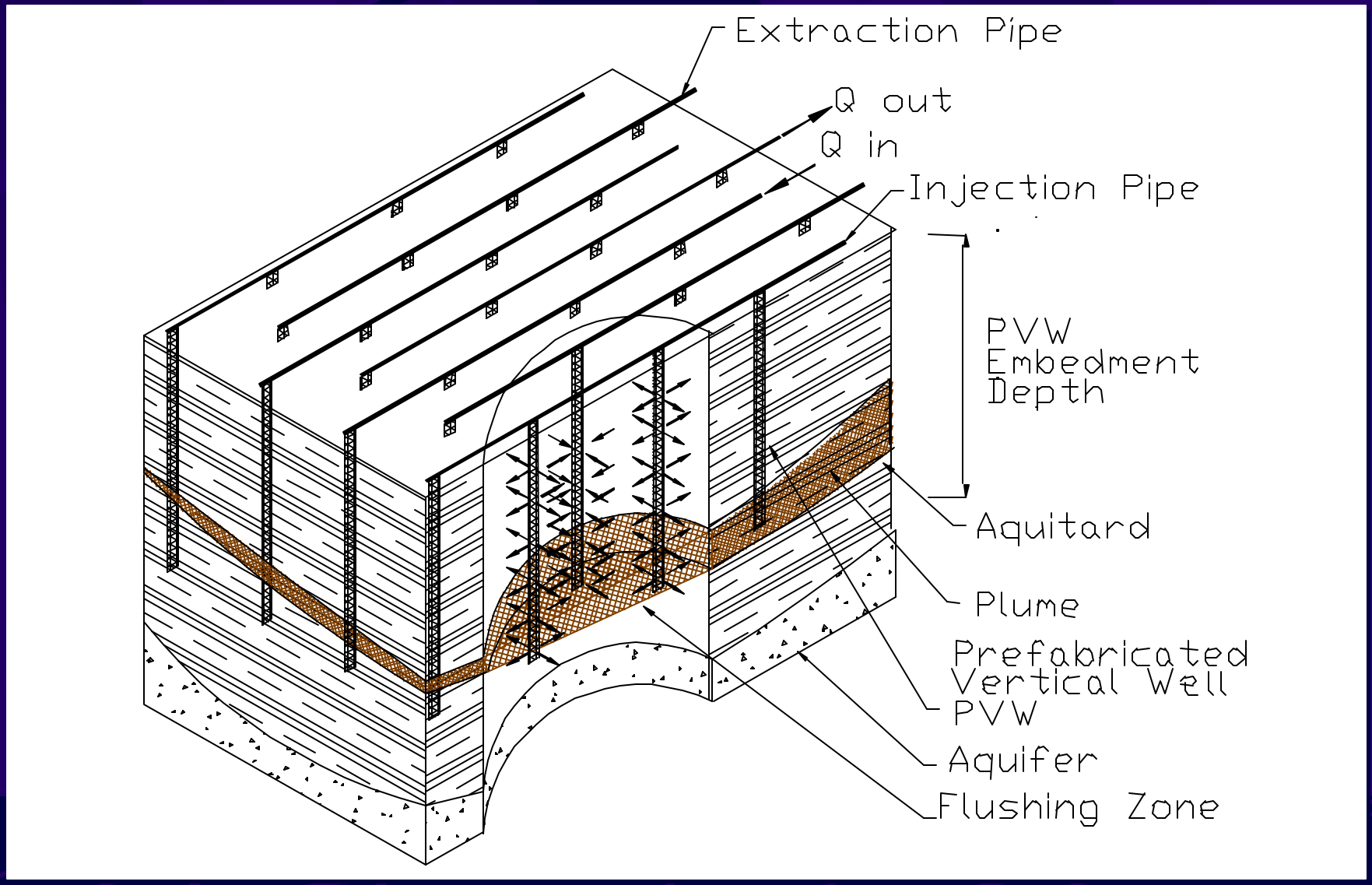

Prefabricated Vertical Well (PVW)

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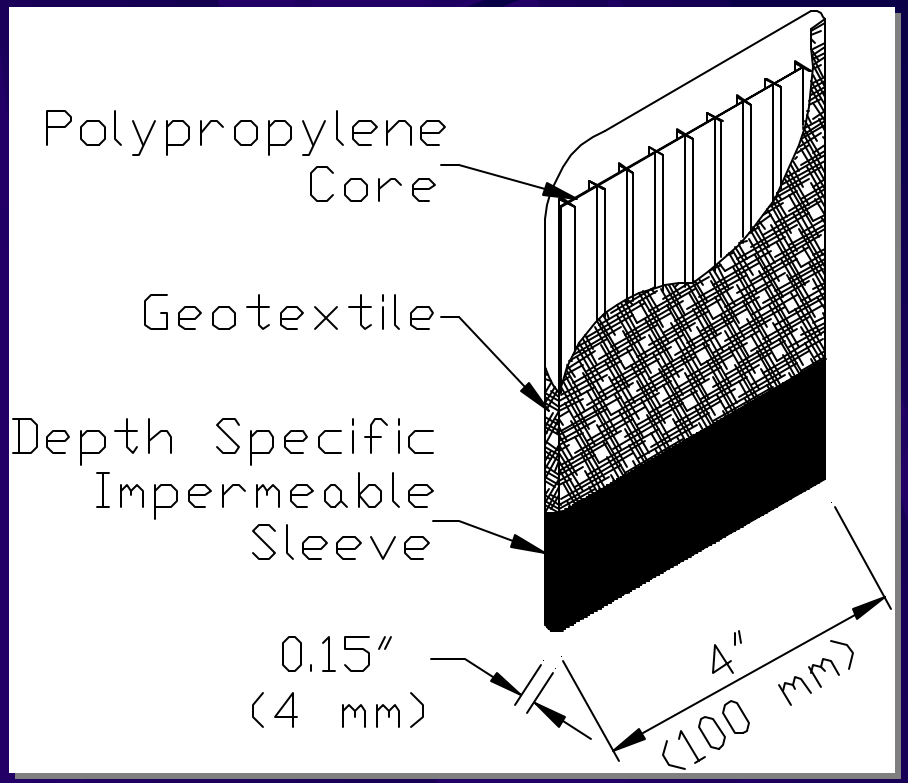

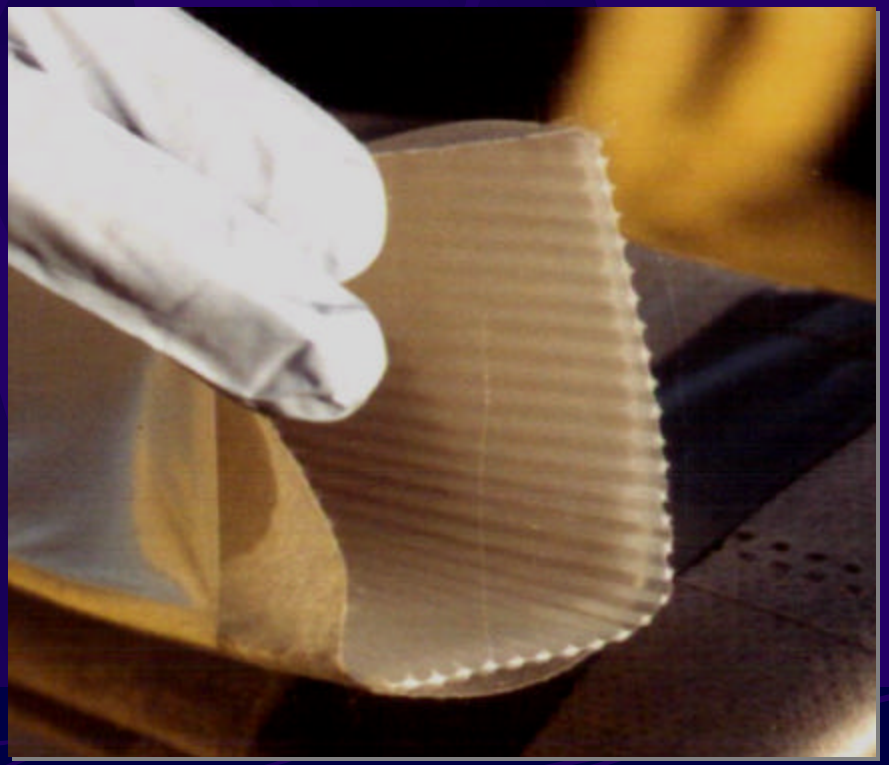

Commercialization Program

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- Effort
- Requirements
  - Continue Engineering Development (make WIDE market ready)
  - Business Planning for Engineers and Scientists – DawnBreaker develop specific innovative technology business plan + marketing
  - Provide capital investment for a +3yr commitment
  - Integrate technology business with corporate resources
    - (find out needs, determine operation of division)
    - (Legal, contracts, accounting, business development)
  - Establish integrated partnership with NILEX
  - Use existing corporate infrastructure

Hanford, WA	Ashtabula, OH
Oak Ridge, TN	Paducah, KY
Rocky Flats, CO	San Antonio, TX AFCEE

Accomplishments

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- NILEX and NCSU Partnerships Successful
- Successful AEMP Deployment and ITSR, Peer Review Reports
- Informatics 8A Contract established with NETL
- 3 New DOE and DoD projects
  - NETL & Army Corps Partnership facilitated Lockbourne AFB, Columbus, OH (Louisville, Nashville, Huntington Corps & NETL)
  - NETL supporting DOE-OHIO Field Office
    - ASTD w/Battelle Columbus Decommissioning Project
    - Funding with Subsurface Contaminants Focus Area
  - SubCon QuickWin with Portsmouth Bechtel Jacobs LLC and DOE-OR Funding with Subsurface Contaminants Focus Area

Lockbourne Deployment Accomplishments

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- The WIDE system was successfully applied for the extraction of JP-4 free phase petroleum hydrocarbon
- The site's subsurface characterization showed an *in situ* hydraulic conductivity ranging 10^{-7} to 10^{-8} cm/s
- A total of 3,590 gallons of contaminated groundwater were extracted with 163.4 gallons of free product, (versus 35 gallons previous year)
- USACE considering incorporation of WIDE into site remediation

WIDE Deployment

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ASTD S32-00 WIDE Deployment at the Battelle Columbus Laboratories Decommissioning Project West Jefferson North Facility JN-1 Abandoned Filter Beds

Project Management:	BCLDP Special Projects – Remedial Action
Funding Sponsors:	EM-50 Subsurface Contaminants Focus Area EM-40 Columbus Environmental Management Project DOE Ohio Field Office
Contract Management:	DOE National Energy Technology Laboratory
Contractor:	Informatics Corporation Subcontractors: Nilex and NCSU

Challenges Facing Technology Commercialization

DOE Projects

- R&D Technologies are typically targeted to sites w/problems having complex & unique waste streams where conventional technologies fail
- Challenging projects for any technology to address
- Innovative technologies further challenged by first time applications with pressing clean-up requirements

Contracts

- Lump Sum/Fixed Price contracts from site M&I's not suited to innovative technology deployments
- Prefer T&M type contracts as best value for DOE/M&I and technology vendor as risks are lower for all

(NETL supports WIDE deployments to DOE-Ohio and USACE by using flexible contract structures)

EM-50 Feedback

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- ASTDs and QuickWin programs best method for supporting innovative technology deployments to field sites
- DOE work closer with sites and technology vendors to troubleshoot contract structures to facilitate ease and acceptance of innovative technology deployment
- Coordinate STCG managers and innovative technology vendors more effectively to pursue ASTD funding